

[Look Up Full Text](#)[Find PDF](#)[A Export...](#)[Add to Marked List](#)

Proteomic Profiles of Young Adults with Acute Myocardial Infarction

By: Bakrim, NM (Bakrim, Mohamed N.)^[1]; Shah, ASM (Shah, Mohd A. S.)^[2]; Shah, ANSM (Shah, Mohd A. N. S.)^[2]; Talib, NA (Talib, A. N.)^[3]; Rahman, JA (Rahman, A. J.)^[4]; Bunnori, NM (Bunnori, Muhamad N.)^[5]; Idorus, MY (Idorus, Mohd Yusri)^[6]; Abidin, SKZ (Abidin, Zainal S. K.)^[7]; Abdullah, A (Abdullah, A.)^[1]

INTERNATIONAL MEDICAL JOURNAL MALAYSIA

Volume: 18 Issue: 3 Pages: 112-119

Published: DEC 2019

Document Type: Article

Abstract

Introduction: Proteomic profiling is essential in understanding the pathophysiological process of multifactorial diseases such as acute myocardial infarction (AMI). Despite the increasing incidence of AMI in young adults, proteomic-based study focusing on young AMI remains limited. This study aimed to examine the plasma proteomic profiles of young adults with AMI compared to control subjects. We also hope to identify disease-specific protein biomarkers that contribute to the development of AMI in the young. Methods: Pooled plasma protein from 10 AMI patients aged 18 to 45 years and 10 age, gender and race-matched volunteers were separated using two-dimensional electrophoresis (2-DE). The spots proteins were analysed using the PD Quest analysis software. The spots proteins that were found to have been expressed differently between the two groups were identified by Matrix Assisted Laser Desorption/Ionization Time of Flight (MALDI-TOF) Mass Spectrometry. Results: There were three differently expressed proteins namely Apolipoprotein AI (Apo AI), Apolipoprotein AIV (Apo AIV) and Haptoglobin ($p < 0.05$). The expressions of these proteins were found to be increased in young patients with AMI compared to control subjects. Conclusion: The up regulation of Apo AI, Apo AIV and Haptoglobin in AMI patients indicate their important roles in the development of atherosclerotic disease. Thus, Apo AI, Apo AIV and Haptoglobin are potential disease biomarkers for young AMI.

Keywords

Author Keywords: proteomic; young adults; myocardial infarction

KeyWords Plus: APOLIPOPROTEIN A-IV; CORONARY-ARTERY-DISEASE; RISK-FACTORS; CHOLESTEROL EFFLUX; PLASMA; HAPTOGLOBIN; ATHEROSCLEROSIS; ABCA1; HDL; MEN

Author Information

Reprint Address: Abdullah, A (reprint author)

+ IIUM, Dept Basic Med Sci, Kulliyyah Med, Jalan Sultan Ahmad Shah, Kuantan 25200, Pahang, Malaysia.

Addresses:

+ [1] IIUM, Dept Basic Med Sci, Kulliyyah Med, Jalan Sultan Ahmad Shah, Kuantan 25200, Pahang, Malaysia

+ [2] IIUM, Dept Internal Med, Kulliyyah Med, Kuantan, Pahang, Malaysia

+ [3] IIUM, Dept Pathol & Lab Med, Kulliyyah Med, Kuantan, Pahang, Malaysia

+ [4] IIUM, Dept Community Med, Kulliyyah Med, Kuantan, Pahang, Malaysia

+ [5] IIUM, Dept Biotechnol, Kulliyyah Sci, Kuantan, Pahang, Malaysia

[6] UiTM Sungai Buloh, Fac Med, Inst Med Mol Biotechnol, Sungai Buloh, Selangor, Malaysia

[7] Hosp Tengku Ampuan Afzan, Dept Cardiol, Kuantan, Malaysia

E-mail Addresses: draszrin@iium.edu.my

Funding

Funding Agency	Grant Number
Ministry of Education of Malaysia, through the Fundamental Research Grant Scheme	FRGS16-056-0555
International Islamic University Malaysia (IIUM) research initiative grant scheme	RIGS 15-076-0076 RIGS 15-077-0077

[View funding text](#)

Citation Network

In Web of Science Core Collection

0

Times Cited

[Create Citation Alert](#)

39

Cited References

[View Related Records](#)

Use in Web of Science

Web of Science Usage Count

0

Last 180 Days

0

Since 2013

[Learn more](#)

This record is from:

Web of Science Core Collection

- Emerging Sources Citation Index

[Suggest a correction](#)

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Publisher

INT ISLAMIC UNIV MALAYSIA, KULLIYAH MEDICINE, JALAN SULTAN AHMAD SHAH, KUANTAN PAHAN, 25200, MALAYSIA

Categories / Classification

Research Areas: General & Internal Medicine

Web of Science Categories: Medicine, General & Internal

See more data fields

◀ 1 of 1 ▶

Cited References: 39Showing 30 of 39 [View All in Cited References page](#)*(from Web of Science Core Collection)*

1. [Prevalence of Conventional Risk Factors and Evaluation of Baseline Indices Among Young and Elderly Patients with Coronary Artery Disease](#) Times Cited: 5
By: Adam, Arsalan Majeed; Rehan, Aiman; Waseem, Nageen; et al.
JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH Volume: 11 Issue: 7 Pages: OC34-OC39 Published: JUL 2017
2. [Clinical profile of young patients with acute myocardial infarction in Saudi Arabia](#) Times Cited: 22
By: Al-Khadra, AH
INTERNATIONAL JOURNAL OF CARDIOLOGY Volume: 91 Issue: 1 Pages: 9-13 Published: SEP 2003
3. [Proteomic study of plasma from moderate hypercholesterolemic patients](#) Times Cited: 34
By: Alonso-Orgaz, Sergio; Moreno, Laura; Macaya, Carlos; et al.
JOURNAL OF PROTEOME RESEARCH Volume: 5 Issue: 9 Pages: 2301-2308 Published: SEP 1 2006
4. [Plasma proteomic analysis of stable coronary artery disease indicates impairment of reverse cholesterol pathway](#) Times Cited: 1
By: Basak, T; Tanwar, VS; Bhardwaj, G.
Sci Rep Volume: 6 Pages: 1-11 Published: 2016
5. [Myocardial infarction in young adults-risk factors and pattern of coronary artery involvement](#) Times Cited: 1
By: Bhardwaj, R; Kandoria, A; Sharma, R.
Niger Med J. Published: 2014
6. [A comparative study of the accuracy of several de novo sequencing software packages for datasets derived by matrix-assisted laser desorption/ionisation and electrospray](#) Times Cited: 21
By: Bringans, Scott; Kendrick, Tulene S.; Lui, James; et al.
RAPID COMMUNICATIONS IN MASS SPECTROMETRY Volume: 22 Issue: 21 Pages: 3450-3454 Published: NOV 2008
7. [Analysis of risk factors, presentation, and in-hospital events of very young patients presenting with ST-elevation myocardial infarction](#) Times Cited: 4
By: Callachan, Edward L.; Alsheikh-Ali, Alawi A.; Wallis, Lee A.
JOURNAL OF THE SAUDI HEART ASSOCIATION Volume: 29 Issue: 4 Pages: 270-275 Published: OCT 2017
8. [Recent Declines in Hospitalizations for Acute Myocardial Infarction for Medicare Fee-for-Service Beneficiaries Progress and Continuing Challenges](#) Times Cited: 105
By: Chen, Jersey; Normand, Sharon-Lise T.; Wang, Yun; et al.
CIRCULATION Volume: 121 Issue: 11 Pages: 1322-1328 Published: MAR 23 2010
9. [Proteomics of acute coronary syndromes](#) Times Cited: 31
By: Didangelos, Athanasios; Simper, David; Monaco, Claudia; et al.
CURRENT ATHEROSCLEROSIS REPORTS Volume: 11 Issue: 3 Pages: 188-195 Published: MAY 2009
10. [Reconstituted HDL containing human apolipoprotein A-1 reduces VCAM-1 expression and neointima formation following periaortic cuff-induced carotid injury in apoE null mice](#) Times Cited: 96
By: Dimayuga, P; Zhu, J; Oguchi, S; et al.
BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS Volume: 264 Issue: 2 Pages: 465-468 Published: OCT 22 1999